

### **REMARKS**

This communication responds to the Office Action mailed on July 13, 2005. No claims are amended, no claims are canceled, and no claims are added. As a result, claims 1-28 are now pending in this Application.

#### **Objection to the Title**

An objection was made to the title of the Application as not being descriptive. The title has been amended to read "AMPLIFIER DISTORTION MANAGEMENT APPARATUS, SYSTEMS, AND METHODS". It is believed that the amended title is more indicative of the embodiments to which the claims are directed. Therefore, it is respectfully requested that the objection to the title be reconsidered and withdrawn.

#### **§102 Rejection of the Claims**

Claims 1-2, 7-11, 16-22, and 24-25 were rejected under 35 USC § 102(b) as being anticipated by Ekman et al. (U.S. 6,288,606; hereinafter Ekman). The Applicant does not admit that Ekman is prior art and reserves the right to swear behind this reference at a later date. In addition, because the Applicant asserts that the Office has not shown that Ekman discloses the identical invention as claimed, the Applicant respectfully traverses this rejection of the claims.

It is respectfully noted that anticipation under 35 USC § 102 requires the disclosure in a single prior art reference of each element of the claim under consideration. *See Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, "[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added).

Ekman is directed to a power amplifier arrangement that comprises at least two parallel amplifier branches. *See Ekman*, Col. 2, lines 19-21. One of the branches comprises a nonlinear

amplifier having a predistorted input signal and an adjustable phase shifter. *See* Ekman, Col. 2, lines 23-25. The branches are used in alternation, depending on which branch delivers greater efficiency at a particular operating point. *See* Ekman, Col. 1, lines 54-65 and Col. 2, lines 58-62. “During the phase correction mode the phase detector 406 compares the phase of the input signal in the new branch to that of the signal in the old branch ... the phase detector 406 produces an output signal that is proportional to the detected phase difference. ... this output signal serves to shift the phase in the new branch so that the phases in the two branches become equal.” Ekman, Col. 7, lines 21-32. The new branch is selected after the phase difference is eliminated. *See* Ekman, Col. 7, lines 32-35. Thus, Ekman teaches that the output signal of a phase detector is coupled to a phase shifter to drive the detected phase difference toward zero. *See* Ekman, Col. 3, lines 27-30.

As a matter of contrast, the Applicant’s invention utilizes “an adjustable phase to be adjusted in response to an indication of *an amplitude* of the output signal to reduce a phase distortion” as claimed in independent claims 1, 8, and 11 (and all claims depending from them). Similarly, “detecting an indication of *an amplitude* of an output signal of an amplifier ... and adjusting a phase of an input signal of the amplifier responsive to the indication to reduce a change in a phase of the output signal” is claimed in independent claims 16 and 22. Thus, Ekman speaks to adjusting the input signal phase responsive to an output phase difference, and not to the *amplitude* of the output, as claimed by the Applicant.

It is respectfully noted that “[t]he *identical invention* must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131 (emphasis added). Since Ekman does not teach “an adjustable phase to be adjusted in response to an indication of *an amplitude* of the output signal to reduce a phase distortion”, or “detecting an indication of *an amplitude* of an output signal of an amplifier ... and adjusting a phase of an input signal of the amplifier responsive to the indication to reduce a change in a phase of the output signal”, what is disclosed by Ekman is not identical to the subject matter of the embodiments claimed, and the rejection of claims 1-2, 7-11, 16-22, and 24-25 under § 102(e) is improper. Reconsideration and allowance are respectfully requested.

§103 Rejection of the Claims

Claims 8-10 and 22 were rejected under 35 USC § 103(a) as being unpatentable over Ekman, and further in view of Huang (U.S. 6,175,302; hereinafter Huang). Claim 11 was rejected under 35 USC § 103(a) as being unpatentable over Ekman, and further in view of Ostermiller et al. (U.S. 5,003,316; hereinafter Ostermiller). First, the Applicant does not admit that Ekman, Huang, or Ostermiller are prior art, and reserves the right to swear behind these references in the future. Second, since a *prima facie* case of obviousness has not been established in each case, the Applicant respectfully traverses these rejections.

The Examiner has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d (BNA) 1596, 1598 (Fed. Cir. 1988). In combining prior art references to construct a *prima facie* case, the Examiner must show some objective teaching in the prior art or some knowledge generally available to one of ordinary skill in the art that would lead an individual to combine the relevant teaching of the references. *Id.* The M.P.E.P. contains explicit direction to the Examiner that agrees with the *In re Fine* court:

In order for the Examiner to establish a *prima facie* case of obviousness, three base criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Appellant's disclosure. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d (BNA) 1438 (Fed. Cir. 1991)).

An invention can be obvious even though the suggestion to combine prior art teachings is not found in a specific reference. *In re Oetiker*, 977 F.2d 1443, 24 U.S.P.Q.2d (BNA) 1443 (Fed. Cir. 1992). However, while it is not necessary that the cited references or prior art specifically suggest making the combination, there must be some teaching somewhere which provides the suggestion or motivation to combine prior art teachings and applies that combination to solve the same or similar problem which the claimed invention addresses. One of ordinary skill in the art will be presumed to know of any such teaching. (See, e.g., *In re Nilssen*, 851 F.2d 1401, 1403, 7 U.S.P.Q.2d 1500, 1502 (Fed. Cir. 1988) and *In re Wood*, 599 F.2d 1032, 1037, 202 U.S.P.Q. 171, 174 (C.C.P.A. 1979)). However, the level of skill is not that

of the person who is an innovator but rather that of the person who follows the conventional wisdom in the art. *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 474, 227 U.S.P.Q. 293, 298 (Fed. Cir. 1985). The requirement of a suggestion or motivation to combine references in a *prima facie* case of obviousness is emphasized in the Federal Circuit opinion, *In re Sang Su Lee*, 277 F.3d 1338; 61 U.S.P.Q.2D 1430 (Fed. Cir. 2002), which notes that the motivation must be supported by evidence in the record.

No proper *prima facie* case of obviousness has been established because either (1) combining the references does not teach all of the limitations set forth in the claims, (2) there is no motivation to combine the references, or (3) combining the references provides no reasonable expectation of success. Each of these points will be explained in detail, as follows.

***Combining References Does Not Teach All Limitations:*** First, with respect to independent claims 8, 11, and 22, no combination suggested in the Office Action will render all of the claim limitations. Ekman does not disclose “an adjustable phase to be adjusted in response to an indication of *an amplitude* of the output signal to reduce a phase distortion”, or “detecting an indication of *an amplitude* of an output signal of an amplifier ... and adjusting a phase of an input signal of the amplifier responsive to the indication to reduce a change in a phase of the output signal”. Neither does Huang or Ostermiller.

As noted above, Ekman makes use of a monitored phase difference, and not amplitude, to adjust the input signal phase. See Ekman, Col. 3, lines 27-30. Thus, independent claims 8 and 22 are nonobvious. This conclusion applies with even greater force respecting dependent claims 9-10 since any claim depending from a nonobvious independent claim is also nonobvious. See M.P.E.P. § 2143.03.

***No Motivation to Combine References:*** The Office asserts that it would be obvious to combine Ekman with Huang “to improve output of the circuit.” However, this assertion overlooks the fact that Huang teaches away from such a combination.

Huang is motivated to invent because “the installation cost of an LC oscillatory loop is expensive.” See Huang, Col. 1, lines 41-42. Therefore, it is an object of Huang’s invention to “provide a tire pressure indicator ... to provide the necessary working power economically.” Huang, Col. 1, lines 45-48. Adding the parallel amplifier configuration required by Ekman to Huang would result in literally doubling the size of Huang’s circuitry, increasing the cost

dramatically. It is respectfully noted that references must be considered in their entirety, including parts that teach away from the claims. See MPEP § 2141.02. Since this combination would not be embraced by Huang, there is no motivation to combine the references.

Further, the use of unsupported assertions in the Office Action does not satisfy the explicit requirements needed to demonstrate motivation as set forth by the *In re Sang Su Lee* court. Therefore, the Examiner appears to be using personal knowledge, and is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

***No Reasonable Expectation of Success:*** Modifying Ekman to implement the antenna structure of Ostermiller overlooks the inoperative combination that would result. While Ostermiller teaches a combination of a loop antenna and an omnidirectional antenna, there is no indication as to how this combination would be used by Ekman. In any case, the combination would not provide phase adjustment responsive to output signal amplitude. Again, the use of unsupported assertions in the Office Action does not satisfy the explicit requirements needed to demonstrate motivation as set forth by the *In re Sang Su Lee* court. Therefore, the Examiner appears to be using personal knowledge, and is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

The test for obviousness under § 103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985). The fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01.

Therefore, since there is no evidence in the record that combining Ekman, Huang, or Ostermiller can provide phase adjustment in response to output amplitude, as claimed by the Applicant; since there is no motivation to supply the missing elements (because the references teach away from such a combination); and since no reasonable expectation of success arises, a *prima facie* case of obviousness has not been established with respect to independent claims 8, 11, and 22, or any of the claims that depend from them. It is therefore respectfully requested that the rejections of claims 8-11 and 22 under 35 U.S.C. § 103 be reconsidered and withdrawn.

Allowable Subject Matter

The Applicant notes with appreciation that claims 26-28 have been allowed. Claims 3-6, 12-15 and 23 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Since it is believed by the Applicant that the independent claims are already in condition for allowance, for the reasons given above, the Applicant respectfully declines to amend claims 3-6, 12-15, and 23 at this time.

CONCLUSION

The Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone the Applicant's attorney, Mark Muller at (210) 308-5677, or the Applicant's below-named representative to facilitate the prosecution of this Application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 13th day of September 2005.

John P. Gustav Wraithall

Name

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Signature